

Overview of Renewable Energy Safety and Health
Written Testimony of John Jones, March 30, 2007

The relative small size of the renewable energy industry, coupled with the novelty of the technology, has resulted in a very limited amount of both safety curriculum and regulatory standards specific to the industry.

An assessment of current OSHA Standards includes only a mention of solar photovoltaics, and there seems to be confusion on both a State and Federal level specific to the skill sets and activities involved in renewable energy installations and maintenance. Depending on the specific regional jurisdiction and geographic location, OSHA has directed installers to comply to with the 1926 (Construction Standard) and specialty work practices congruent with communications workers (heights and towers) and electrical generation (large scale installations).

NorthWestern Energy is responsible for the allocation of renewable energy Universal Systems Benefit (USB) funds in Montana. The network of installers in the State compete for those funds, and at this time, there is no professional criteria for installers other than the requirements of the Montana Electrical Standards – which dictates licensed electricians for installations that exceed 90 volts AC. Through communications and review of the installers and specific projects, the Utility realized that the skill level and safety training for installers had a large variance, and they recognized the need for specific safety training and compliance for those requesting USB funds.

In December of 2006, the Utility invited all Montana installers to a day-long seminar in Butte that provided an overview of the requisite safety and labor standards that installers must meet to legally practice their trade in Montana. This included an introduction of OSHA requirements, State statutes, and included an interactive presentation and dialogue period specifically related to the renewable energy profession in Montana.

As a direct result of the Butte meeting, I spoke with Ross Yeager (the Montana Regional OSHA Director) and was directed to work with Mike Foreman, who is a compliance specialist at the Billings office.

At my request in a February 9th (2007) meeting in Billings, Mike agreed to meet with the installers who belong to the Montana Renewable Energy Association (MREA) – with the intent of exploring a cooperative partnership that would address the trade and provide training and direction for the installers. This will not include safety training for crafts installers are not licensed to practice (ie. electrical work).

A significant portion of the partnership with OSHA will involve what are termed JSA's (Job Safety Analyses). Because of the lack of training material and knowledge of job tasks by the safety community, the development of standards and consequent training cannot happen without an understanding of what is specifically involved in a solar PV, solar thermal or wind turbine installation.

In my opinion, based on extensive research of regulatory statutes, existing industry training and specific curriculum developed by organized labor, Montana is at a similar point as the majority of states; which is the beginning stage of understanding and communication between the professions required to develop substantive safety and health standards for the industry. At the current time, CALOSHA (California OSHA) is leading the efforts due to the spike in installations resulting from the Million Solar Roofs Initiative.

But, in reviewing the progress in California, the authorities there have still not decided whether installations of solar PV systems should be done under a C-46 (Solar Boiler) or C-12 (Electrician) License. This issue of who can install was tabled by the California Energy Commission in order to pass the initiative, in part due to the defeat of the legislation the previous year in the California legislature due to the contentious nature of the license.

Oregon and several other states have passed legislation enabling a Licensed Renewable Energy Technician license (which allows installations up to 25 kilowatts). In these states, electricians are also licensed for renewable installations.

In my communications with both regulatory officials and safety professionals in other states, the overwhelming consensus is that there is a specific need for training and standards currently not available but necessary for the profession. This is based mostly on the combination of several high-risk safety factors – heights (fall protection) and high voltage DC electricity. It is their opinion that these are not adequately addressed in traditional apprenticeships, and many of the devices required for installations, such as harnesses and tower erection are rarely, if ever, encountered by residential electricians.

I do believe that many of the safety practices inherent to the electrical trade are valid in the renewable energy profession. I also respect and support the training programs of organized labor and the positive safety culture provided by the IBEW. However, I do see several potential issues/problems with not at least exploring both skill based and safety training for Montana's renewable energy installers.

The first is that, based on testimony in California and input from Montana installers (including electricians), a large percentage of the electrical portion of installations involves skill sets and knowledge that is not currently available through normal apprenticeship or continuing education training. These professionals also commented that successful installations also require knowledge of physical sciences and mathematics not included in traditional electrical training.

The second is the fact that most installers in Montana, in order to survive, perform installations that include solar PV, small wind, and solar thermal. From a craft standpoint, to successfully do all three, installers would require certification in the electrical, machinist, and pipefitter/boilermaker trades. Montana differs from other areas in that there is not a large metropolitan area that supports only solar PV installations. At this point in the development of the industry, renewable businesses in Montana would not exist without offering customers renewable options.

In closing, I hope this brings forward the major issues that Montana will face in the degree and direction of renewable energy in our State. And of the greatest importance is that there is not a death or serious injury to an installer. It is my belief that the potential for a catastrophic event is quite high – and I believe that the final standards developed and adopted by OSHA for the trade will be very stringent.

At the current time, it is only legal for licensed electricians to perform USB installations that tie in to the utility grid. And, as a general overview, from a safety perspective, electricians have the highest degree of safety training and support available. But, as the debate in California points out,

the skill requirements and safety training for conventional electricians may not be specific and extensive enough.

I would also like to point out that the OSHA training supported by NorthWestern Energy does not apply to electrician specific safety. Rather it is directed towards general construction, fall protection, and mobile equipment safety. Again, NWE does not support or condone lay workers performing electrical work, and expects installers who are not electricians to contract the electrical portion of the installation to a licensed professional.

I urge all of you to carefully evaluate and consider the potential of who can and cannot perform installations in Montana. If nothing else, I believe it is worth quality dialogue between the MREA and the Montana Electrical Board before a final decision is made or puts limits on the industry without objective criteria. There is a lot of legwork and data that is going to come out of California and Colorado from a safety and regulatory perspective. Installers are currently following the Montana Electrical Board Statutes and providing work for electricians. It is my belief that a significant amount of valuable information will be available in the near future and more conclusive and specific data will be available for the decision making process.

***This comment was provided by John Jones. I (John) was responsible for the development of the *Consumer's Guide for Renewable Energy, Rediscovered Treasures (Montana's Renewable Energy Future)*, *Light Made Simple – The History of Solar Photovoltaics and Wind and Solar PV Generation (DVD)*. All of these are part of the renewable energy library available to NorthWestern Energy Customers. *Rediscovered Treasures* has also been distributed to over 5,000 middle school science classes throughout the United States and Canada.**

I am currently contracted by NorthWestern Energy to research and develop a training curriculum (excluding electrical specific work) for Montana renewable energy installers. The majority of this includes working collaboratively with OSHA in the development of task specific safety procedures relative to general construction standards, fall protection and the use of mobile equipment.

My comments in this letter were not directed by, nor do they represent NorthWestern Energy. Rather, Pat Judge asked that I provide a short overview of renewable energy licensing and safety issues and concerns as they relate to Montana, as well as the "non-electrical" safety efforts supported by the Utility. Thank you for allowing me to do so.

Montana Renewable Energy Installers



User Name ☐ Remember Me?
 Password

[Register](#)
[FAQ](#)
[Members List](#)
[Calendar](#)
[Today's Posts](#)
[Search](#)

Welcome to the .

If this is your first visit, be sure to check out the **FAQ** by clicking the link above. You may have to **register** before you can post: click the register link above to proceed. To start viewing messages, select the forum that you want to visit from the selection below.

Forum	Last Post	Threads	Posts
Members Area			
Information This is where information from Northwestern Energy, OSHA, and USB will be posted	Welcome on OSHA Updates by John Jones 02-26-2007 04:22 PM	1	1
Safety Safety Information and Documents	Lockout/Tagout Power Point... by John Jones 02-26-2007 04:42 PM	1	1
Licensing Licensing Information and Documents	Licensing Information by John Jones 02-26-2007 05:36 PM	1	1
Training Training Information and Documents	Never	0	0
Other States' Information	Never	0	0

[Mark Forums Read](#)
[View Forum Leaders](#)

What's Going On?

Currently Active Users: 1 (0 members and 1 guests)



Most users ever online was 2, 02-27-2007 at 03:30 AM.

Statistics



Threads: 4, Posts: 5, Members: 5, Active Members: 3
 Welcome to our newest member, [Patrick Judge](#)



Forum Contains New Posts



Forum Contains No New Posts



Forum is Closed for Posting

All times are GMT. The time now is 01:28 PM.